

Date: Tue, 14 Dec 93 04:30:45 PST
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V93 #132
To: Ham-Homebrew

Ham-Homebrew Digest Tue, 14 Dec 93 Volume 93 : Issue 132

Today's Topics:

 Built in transmatch
Nation-specific radios (?) and Powering small speakers
 PIN diode question
 Wanna build VLF rcvr. Info?

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 13 Dec 93 10:52:01 EST
From: pipex!sunic!psinnntp!psinnntp!arrl.org@uunet.uu.net
Subject: Built in transmatch
To: ham-homebrew@ucsd.edu

In rec.radio.amateur.homebrew, gary@ke4zv.atl.ga.us (Gary Coffman) writes:

>In article <2675@arrl.org> zlau@arrl.org (Zack Lau) writes:

>>

>>Has anyone figured how to design an RF output stage

>>with a built in transmatch that can't be mistuned

>>as a frequency multiplier?

>

>Normal practice is to *not* design tank circuits that can

>resonate across multiple octaves. That doesn't normally

>limit the range of impedances a network can match, but it

>does limit the types of networks that can be used.

This is easy if you are designing it to run into a *known*
impedance. But, if you want you matching network to also

operate as a transmatch, you have now have a real challenge.

Summarizing the email I've gotten, it looks like it may be possible to use a phase/frequency ECL detector like the MC12040 and a variable phase shifter to detect frequency multiplier operation--at least in theory.

There are other possibilities, such as measuring the impedance presented to the transmitter and calculating the best matching network to use. This has the advantage that a sophisticated system might also determine the expected harmonic rejection of the resulting network into the actual load. Even a degraded harmonic rejection can cause problems.

But, looking at the big picture, it probably makes sense to stick with the modern approach and go to 50 ohms so you can add that low pass filter--if needed. After all, when solving sticky political/technical problems like RFI, it sometimes helps be able to say you did something to fix the problem. Even if it was technically irrelevant...

Zack Lau KH6CP/1

Internet: zlau@arrl.org "Working" on 24 GHz SSB/CW gear
8 states on 10 GHz.

Date: Sun, 12 Dec 1993 16:19:10 GMT
From: gsm001!gsm001.mendelson.com!gsmlrn@uunet.uu.net
Subject: Nation-specific radios (?) and Powering small speakers
To: ham-homebrew@ucsd.edu

In article <CHwIxz.8Mx@Dunx1.0CS.Drexel.Edu>
st92ba44@dunx1.ocs.drexel.edu (antonio gatta) writes:

>1) my grandfather bought a radio last year that was marketed to bring in
> a foreign channel (italian news/entertainment) 24 hours a day. He listens
> to it all the time so I assume that its working the way it should. Here's
> my problem, how does the radio (with only a 2 foot antenna) pick up the
> signals from italy 24 hours a day? What kind of radio is it?

Most likely it is an FM broadcast radio with an SCA (SubCarrier Authorization) decoder. The bandwidth of an fm broadcast signal is wide enough that with proper permits, a station can broadcast another program.

Many people use these for alternate language programing.

Ramsey sells an SCA decoder kit, but it is now illegal to listen to SCA broadcasts without permission of the broadcaster. If they are using the sales of the radio to finance the air time, they might say no.

73,

Geoff.

--
I used to talk to myself..... Now that I am a ham, I send code to myself:
-... --- -.--- - --- ..- -.----- . . .-. -.. -.-.-

Geoffrey S. Mendelson N30WJ (215) 242-8712 gsm@mendelson.com

Date: Mon, 13 Dec 1993 21:47:02 GMT
From: olivea!sgigate.sgi.com!sgiblab!swrinde!sdd.hp.com!col.hp.com!srngenprp!
alanb@decwrl.dec.com
Subject: PIN diode question
To: ham-homebrew@ucsd.edu

Roger Traylor (rlt@ssd.intel.com) wrote:

: Dear PIN diode hotshots:

: I am considering using PIN diodes to switch between bandpass
: networks in a project. However, I read in Hewlett Packard
: Application note 922 about the low frequency limit at which
: these devices can be used. It mentions that at frequencies
: well below $f_c = 1/(2\pi\tau)$ that a PIN diode acts like an
: ordinary PN diode. At frequencies about $10f_c$, the PIN diode
: looks like a variable resistor.

:
: My question is: does this restriction apply only to
: applications where the diode is used in the linear resistance
: region. My application would operate only in the fully "on"
: or fully "off" (i.e. switch) regions. Are there any other
: "gotchas" for PIN diode usage at 3-30MHz?

Disclaimer: I'm not a PIN diode expert.

If you run a DC current through the diode greater than the peak signal current (1.4 times max RMS current), then the diode should be "on" even if the frequency is too low for true PIN action.

Similarly, if you back-bias the diode with a voltage greater than the peak signal voltage (1.4 times max RMS voltage), then the diode should be "off" even at low frequencies.

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Date: 13 Dec 93 20:46:09 GMT
From: ogicse!news.tek.com!gvgpsa.gvg.tek.com!gold.gvg.tek.com!gvgadg.gvg.tek.com!
groverc@network.ucsd.edu
Subject: Wanna build VLF rcvr. Info?
To: ham-homebrew@ucsd.edu

In article <1993Dec10.182028.2774@Mr-Hyde.aoc.nrao.edu>,
<pharden@Mr-Hyde.aoc.nrao.edu> writes:
> Does anyone know the whereabouts of information for building
> a VLF receiver (500 kHz and below?). Either a kit or 100%
> homebrew?
>
I need the same info, should anyone have it.

thanks and 73,

Grover
WT6P

End of Ham-Homebrew Digest V93 #132

